

Vega N1

Waterproof Bullet Full HD Sports Camera



User Guide

(Important) Legal Mumbo Jumbo

■ **FCC Verification:**

NOTE: This equipment has been tested and found to comply with the limits for Class B digital device, pursuant to part 15 Of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

■ **IMPORTANT NOTE:** Prohibition against eavesdropping

Except for the operations of law enforcement officers conducted under lawful authority, no person shall use, either directly or indirectly, a device operated pursuant to the provisions of this Part for the purpose of overhearing or recording the private conversations of others unless such use is authorized by all of the parties engaging in the conversation.

■ **WARNING:** Modifications not approved by the party responsible for compliance could void user's authority to operate the equipment.

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Introduction

You've gone and done it now. Really taken the cake. You've bought a 1080p Waterproof GO4 Vega N1 - miniature, waterproof, easy to use.

You've nabbed yourself a camera that's perfect for capturing your insane antics and displays of immense skill.

It's great for recording biking , skating, skiing or snowboarding , surfing or throwing yourself out of a perfectly good aircraft . Or just about anything else you can think of!



Strap it to your head, arms, legs, butt , bike , board , gear, rigging or shoes. Or you can think outside the box .



Use it to capture video to show your friends and share your videos online.

Where Stuff is At (The Layout)

Power/ Record Button Heck, we might as well call it "the button" - it is all on its lonesome.

The Frontside
Rear Cap

Targeting Laser
Lasers make everything cooler.
Lens

A bit of high-quality gloss used to focus stuff.

Indicator LED



The Backside

Reset
Sets everything back to the factory defaults.

USB Port

For charging, computers and composite video output.

1080p / 720p Switch

Choose between 720p (nice) and 1080p (seriously nice).

microSD Card Slot

For inserting a microSD card and nothing else.

Mini-HDMI Port

Pure awesomeness in one output.

Infrared Sensor (for Remote)



Getting Started

Right. So, you've got the SportsCam. It's Friday afternoon, and you're headed out skating on Saturday morning and you want to get the SportsCam setup and ready to rock and/or roll.

1. Charge the battery.

Short version: Plug the little end of the USB cable into the SportsCam, and the big end into the included power adapter. Plug the power adapter into a wall socket. Wait two to three hours. Bam!

Check out page 8 for the long version on getting yourself some power.

2. Jam a microSD card in it. Gently.

Short version: Ensure there's nothing on the microSD card you want to keep, as we'll be formatting it in a moment (that erases all the data and preps it for recording video). The SportsCam shoots high-def video, so grab yourself a decently big card - we reckon that 8GB is a realistic minimum, with 16GB or 32GB cards recommended.

Check out page 7 for the long version regarding microSD cards.

3. Set up your Camera using the On-Screen Menus

Short version: Connect the SportsCam to a television or monitor using either the mini-HDMI output or the COMPOSITE VIDEO output (that's the weird USB to RCA cable - one end goes into the USB port on the SportsCam and the other to the VIDEO IN on a TV). Use the Remote Control to access the menus see("The Remote Control" on page 14). We think the best course of action is to:

- Choose your recording format (PAL or NTSC).
- Format your microSD card.
- Set the Date and Time.
- Choose your Resolution.
- Choose your Quality settings.

Your microSD Card and You

Choosing a microSD card:

The SportsCam will accept a microSD card up to 32GB in capacity. You can store between 7— 30 minutes worth of video per gigabyte (GB). Check out page 17 for more information on recording times versus quality settings.

We recommend using cards of at least 8GB to ensure that the SportsCam won't run out of storage space whilst you're filming, 16GB or 32GB are recommended for recording in 1080p at high quality.

Of course, if you only want to record ten minutes at a time, you could get away with a much smaller card. But remember, when it runs out - that'll be all she wrote!

For reliable performance, we strongly suggest that you use a card with a speed rating of “Class 4” or higher.

Look for these symbols: ④ ⑥

Inserting a microSD card:

- Hold the SportsCam so that the rear panel is facing you, and the power/record button is facing up.
- Orient the microSD card so that the text is facing up.
- Gently push the microSD card into the slot. Be careful that it goes in correctly - if it misses the slot or is inserted at an angle, it could become jammed.
- The card will "click" into place once fully inserted.
- To remove the card, simply push it in. This will release the locking mechanism, and the card will spring out. Be careful when removing the microSD card - the little spring that pushes it out is quite powerful.

You Got the Power: Charging the Battery

The SportsCam charges via the mini USB socket on the rear panel.

◇ Insert the mini-USB plug on the USB adapter or USB cable in to the USB socket on the rear of the SportsCam.

◇ Connect one end of the USB adapter or cable to the USB port on the included power adapter.

Under no circumstances ever connect the SportsCam to any power source supplying anything other than 5V. It's safe to connect it to a USB port on a computer (see below!) and the included power adapter.

Computers don't cut it!

The current supplied by most computer's USB ports (sv 500mA) is not sufficient to properly charge the SportsCam. The SportsCam's battery is small, but powerful, and it needs more juice to charge. The supplied adapter (5V 1000mA) is perfect for the job, and you'll get much better results using that.

Charging Status Indicator LEDs

While the SportsCam is charging, the **red** LED on the rear panel Will Light up. It will go out when the SportsCam is fully charged. The **green** LED will light up whenever the SportsCam is connected to power.

As the **green** and **red** LEDs are located very close to one another, you might need to tilt the SportsCam slightly relative to your eye to see what both of them are doing!

The SportsCam takes 2 hours to charge using the included USB charger. It will take much longer from a USB port, if it charges at all.



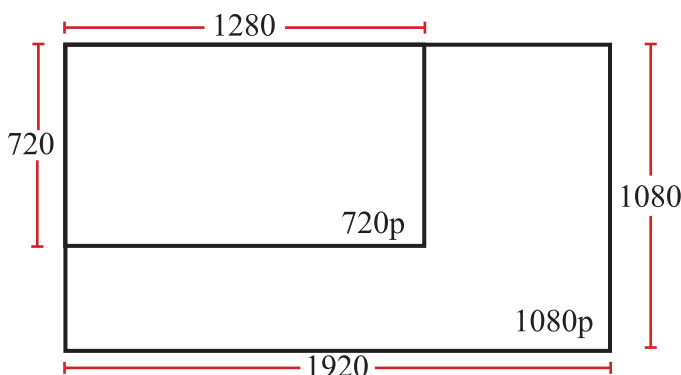
The Button: "Operating Guide"

Button, button, who's got the button? Oh, it's where we left it, right in the middle on the top. Pretty obvious, really.

Things that Pressing The Button will do	
Turning the Camera on and Recording Video	While the camera is off charged and disconnected from any USB or HDMI connection (PC, composite video, HDMI or charger) press and hold the button down for approximately 2~3 seconds. The camera will beep three times. The LED on the front of the camera will light up for a moment, and will flash red while recording video. The targeting laser will come on for a few seconds unless disabled, then automatically go out.
Engage the Targeting Laser	While the camera is on, press the button and hold for a quarter of a second and then release. The targeting laser will come on for a few seconds and then automatically switch off.
Stop Recording and Shutdown Camera	While the camera is recording, press and hold the button for about three seconds. The camera will beep twice, and the green LED will light up for a moment.
Booting the Camera into HDMI, USB or Composite Video Modes	When the SportsCam is turned OFF, insert the cable associated with your desired outcome (USB cable for a computer, USB-to-RCA cable for Composite Video or the HDMI cable for HDMI). Connect the other end of the cable to the desired device (computer, monitor or TV, as applicable). Press and hold the button for three seconds to turn the camera on. The SportsCam will automatically boot into the appropriate mode for the cable connected.

Resolution: Choosing It

The SportsCam can record at two different resolutions: 720p (1280 x 720) and 1080p (1920 x 1080). To select your resolution, use the switch on the rear panel of the camera.



Why would you want to record at a lower resolution? Believe it or not, there are actually a few really good reasons to record at 720p. Here are a couple, presented in reverse order of pretentiousness:

- ◇ It's very, very slightly more retro, and (ergo) cooler. (Hipsters only.)
- ◇ Not everyone can playback 1080p - many TWs (even some marked "HD" can't playback 1080p - most systems that can will claim "Full HD" or "1080p" somewhere on the unit or the packaging (most likely both).
- ◇ If your TV supports 1080i but not 1080p (again, this will be written on it somewhere), then playback of 720p may actually have a slightly higher vertical resolution (720 lines versus 540) when displaying rapid motion.
- ◇ 720p is often less prone to artefacting when recording rapid motion than 1080p.
- ◇ 720p uses less space than 1080p - SO, if you're trying to get the most possible out of your memory card, then it's a good option. 1080p requires approximately 8000~13000kbps, whereas 720p uses 4000~8000kbps (it varies by your Quality setting). You'll get about 40 minutes of 1080p to the same space as 1 hour of 720p.

Seeing how cool you are (Playback)

There are two ways to playback videos from the SportsCam, depending on your needs and access to equipment. The options are:

Playback via a Computer

Provided your computer meets the minimum specs to playback the SportsCam's videos (most modern computers will).

Playback via the mini-HDMI Port

The mini-HDMI port on the camera is great connecting to a high definition television or monitor with HDMI inputs.

Playback via the Composite Video Out

The included USB to RCA cable can be used to connect the SportsCam to an old-school television with RCA inputs. These are often labeled as Video In, Composite In, AV, or similar.

The composite video out puts out a standard definition signal (480 lines for NTSC, 576 lines for PAL) - so, there is a noticable drop in quality. Also, due to the analog nature of the technology, there's the chance of some noise or distortion. However, it's a great way to quickly review footage when you don't have your full HD hundred-and- fifty inch plasma panel handy.

Container:MOV

Compression:MPEG-4 AVC (Advanced Video Codec)

Bitrate:4000kbps (720p, low) to 12000kbps (1080p high)

Audio Bitrate:128kbps

Audio Channels:2 (stereo)

Sample Rate:48KHz

Playback on a Computer

You can transfer data from the microSD card onto a computer for the highest quality playback possible.

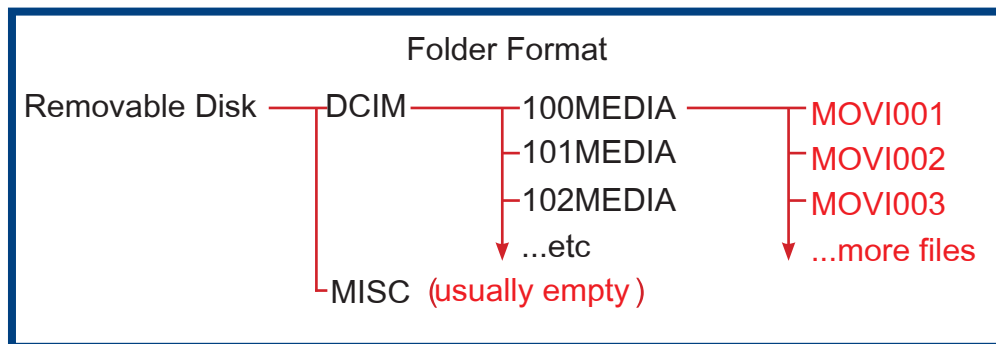
There are two options for downloading data to a computer:

USB Cable

- ◇ Turn the SportsCam off.
- ◇ Connect the SportsCam to your computer using the USB cable.
- ◇ Press and hold the button for three seconds. The SportsCam will start up in USB storage mode.
- ◇ The microSD card's contents will be detected by the computer, and will be accessible in the same way as a USB flash drive.
- ◇ Remember: the SportsCam will not charge while connected to a computer - it needs more juice!

Removing the microSD card

- ◇ Remove the rear cap of the SportsCam then Push the microSD card in to remove it. Be careful - the spring that pushes it out is pretty powerful.
- ◇ Use a USB card reader connected to your computer to access the files on the card. You may need an SD to microSD card converter, if your card reader doesn't support the microSD format.



HDMI And Composite Video Playback

You'll need A HD-TV or high resolution monitor with HDMI IN and a mini-HDMI to HDMI cable.

- ◇ Remove the rear cap from the SportsCam
- ◇ Connect an HDMI cable to the mini-HDMI output on the rear panel of the SportsCam
- ◇ Connect the other end of the mini-HDMI cable to an HDMI input on your television/monitor.
- ◇ Set your television/monitor to the appropriate channel.
- ◇ Turn the SportsCam on (press and hold the button for about three seconds).

Playback via Composite Video Out

- ◇ Remove the rear cap from the SportsCam.
- ◇ Connect the included USB to RCA cable to the mini-USB port on the rear panel of the SportsCam.
- ◇ Connect the Video Out plug (the **yellow** one) to a Video Input on your television, monitor or recording device (as applicable). It will most likely also be **yellow**.
- ◇ If you want to hear the action, connect the **white** (left) and **red** (right) plugs to your Audio Inputs. If your device is MONO, connect the **white** (left) one only.
- ◇ Set your television/monitor to the appropriate channel.
- ◇ Turn the Sports Cam (press and hold the button for about three seconds).

The Remote Control



Using the Remote Control during Playback

- ◇ Press MENU to open the on-screen menu.
- ◇ Press MODE to enter playback mode, and to switch from MOVIE to PHOTO playback mode.
- ◇ Use the arrow buttons to highlight the item you want to view, and press OK to initiate playback.
- ◇ Press STOP to end playback.

Settings

QUALITY	H	The best recording quality possible, approximately 8Mbps for 720p and 12Mbps for 1080p. This does require a lot of storage space.
	M	A middle-ground data rate, approximately 6Mbps for 720p and 10Mbps for 1080p.
	L	The lowest data rate, approximately 4Mbps for 720p and 8Mbps for 1080p. This will maximize your recording time at the expense of quality.
PHOTO SIZE	3M	2048 x 1536 pixels / 1.5MB
	4M	2592 x 1728 pixels / 2.1MB
	5M	2592 x 1944 pixels / 2.6MB
	8M	3200 x 2400 pixels /3.5MB
	12M	4000 x 3000 pixels /4.8MB
WHITE BALANCE	AUTO	The color balance is automatically adjusted by the camera.
	INCANDESCENT	For filming under artificial lights (tungsten bulbs and equivalent) and for light that appears slightly orange (approximately 3000°K)
	SUNNY	For shooting in natural daylight on a clear day. For “white light” (approximately 5600°K)
	CLOUDY	Suited to shooting on an overcast day, where the light appears slightly blue (approximately 6500°K)
	FLUORESCENT	For shooting under artificial light from fluorescent lights, which are typically slightly green (approximately 4500°K)
	WATER	For filming in water.
AE METER MODE	AVERAGE SPOT CENTER	To get the right exposure
RECORD MODE	PAL	Recording at 25 fps / 50fps
	NTSC	Recording at 30 fps / 60fps

REC. OVERWRITE		When it is active, there will be c on the screen. It will File every 5 minutes.
SPLIT MODE	DEFAULT SETTING	System will save file only when stop recording`
	2MIN	System will save files every 2 minutes.
VIDEO ROTATION	STANDARD INVERTED	If you choose INVERTED, the video will turn up-down.
TIME AND DATE	SET TIME AND DATE	You will enter an menu to set it.
TIME STAMP	DATE/TIME	Date & Time will show in the video.
	DATE	Date will show in the video.
	TIME	Time will show in the video.
	OFF	No stamp will show in the video.
POWER OFF	OFF	The camera will not turn off automatically.
	1 2 3 5MIN	The device will be powered OFF in set time if there is no operation.
LASER	ON OFF	You can switch ON/OFF the LED light which normally blinks during recording.
CAR MODE	ON OFF	If ON, when you connect this device to car power via a car adaptor, it will power on the device and start recording. After you turn off your engine, the device will power off in 30 seconds.
LANGUAGE		English/ Русский
DEFAULT SETTING		Choose Yes, to restore the factory settings`
FORMAT		To format the card. Caution: all data on the card will be erased.
FIRMWARE CHECKING		To check the firmware version`

Showing your Quality

How much can I store on a microSD card?

That depends on a few things. First, how big is your SD card? Secondly, what are you recording, and at what quality?

The resolution and quality is going to have a huge impact on how much you'll be able to record. Seriously - check it out:

Quality & Resolution Settings: Video			
	Low	Medium	High
720p	4007kbps (30 min per GB)	6270kbps (20 min per GB)	8334kbps (15 min per GB)
1080p	8109kbps (15 min per GB)	10284kbps (11 min per GB)	12361kbps (7 min per GB)

Photo Quality	Dimensions	Size (approx)
3M	2048 x 1536	1.5MB (600+ per GB)
4M	2592 x 1728	2.1MB (475 per GB)
5M	2592 x 1944	2.6MB (385 per GB)
8M	3200 x 2400	3.5MB (285 per GB)
12M	4000 x 3000	4.8MB (208 per GB)

What happens when you lower the Quality?

Basically, the camera tries to use less data to represent the same image. This means the compression needs to work harder. 720p @ LOW quality uses only half the data of 720p @ HIGH quality, and it looks about half as sharp. However, you'll be able to store twice as much to your microSD card.

It becomes more noticeable when you pause the video. Even at low quality, during real-time playback, the video still looks reasonable (and better than, say, most videos on YouTube or similar online video services).

Shooting Your Troubles

Q: It won't turn on!

A: Try turning it on and off again. Has the camera been left on/recording for a while for a while? Is the SportsCam charged? If not, check out "You Got the Power: Charging the Battery" on page 9. Also, don't try to charge from a computer's USB socket, because it probably won't.

Q: I can't play back footage on my computer

A: Try using a different program, such as VLC Media Player (a favorite around the Swann office).

It's available free from www.videolan.org/vlc, and works with a huge range of operating systems. You may need to drag and drop the file onto the VLC (or appropriate program) window if the default file association isn't right.

Q: The audio sounds muffled.

A: Are you using the waterproof cap? Unfortunately, sound doesn't travel so well through solid plastic.

That's the downside about making it waterproof - it's pretty sound-proof, too. You can use this to your advantage - in many high wind situations (anything 65mph [100km/h] or faster) it can actually make the audio quality better.

If you're not using the SportsCam in or around water, try using the non-waterproof cap (the one with the little holes). Sound travels better through holes (or so we've heard).

Q: The audio sounds distorted/weird/too loud.

A: This can often happen if you attach the SportsCam to a vehicle, skateboard, bicycle or anything else which vibrates when in use. Try it with and without the water-proof cap (unless you need it to be waterproof). Try using a different mounting option. Try attaching the camera to your clothing using the hook & loop patches - cloth usually muffles vibrations and might improve the audio quality. Finally, remember that in certain situations you're just not going to be able to get any decent audio - for example, when the background noise level is simply too high. It sucks but sometimes there's nothing that can be done: physics is a harsh mistress.

Technically Speaking (Specifications)

Sensor type		CMOS 2592x1944
Viewing angle		135 degrees @ 720p 110 degrees @ 1080p
Storage consumption based on 2GB micro-SD (approx)	Snapshot 3M	1200+ (2048 x 1536)
	Snapshot 4M	950 (2592 x 1728)
	Snapshot 5M	770 (2592 x 1944)
	Snapshot 8M	570 (3200 x 2400)
	Snapshot 12M	416 (4000 x 3000)
Storage consumption based on 2GB microSD	1080p	High: 15 min / Medium: 25 min / Low: 30 min
	720p	High: 30 min / Medium: 40 min / Low: 60 min
Recording format		.MOV MPEG-4 AVC
Video Record	Resolution	1080p (1920x1080) @ 25fps (PAL) / 30fps (NTSC)
		720p (1280x720) @ 25fps (PAL) / 30fps (NTSC)
Photo Resolution	Snapshot 3M	2048 x 1536
	Snapshot 4M	2592 x 1728
	Snapshot 5M	2592 x 1944
	Snapshot 8M	3200 x 2400
	Snapshot 12M	4000 x 3000

Digital Zoom		None
AV output	AV output	Composite NTSC/PAL via USB to RCA cable mini-HDMI
	HDMI	
USB Interface		USB 2.0 for data transfer
Charging		Included charger (5V, 1A) or via USB 2.0 Port
Microphone		2 built in microphones (stereo)
Power Consumption		Approx. 400mA@3.7V (max.)
Lithium Battery		600mAh
Record Time		90 min
Laser power		1mW
Storage temperature		-4 F ~140 F/-20 C ~60 C
Operating temperate range		-4 F ~122 F/-20 C ~50 C
Operating humidity range		15~85%RH

Due to product improvements, specifications are subject to change without notice

GO4 Vega N1 Sports Camera Quick Installation

Part I : Get Started



Before you get started, you need to put this small adaptor onto the camera. If you use the helmet mount, skip this step. Check point 4 below.

Part II: Different Applications

1. For bike



After you finish this, you can put this construction on to your bike. There is one rubber insert. If your bike bar is a little small, you can use that. Also you can rotate and lock that position.

2.For Surf board



After you finish this, you can stick it to your surf board or any surface. And you can tilt or rotate the camera. After you got the right position, use the screw to lock that position.

3.Mount in a car



Mount it on your car window. You can rotate it. If you need auto recording function, you need another USB charging cable. Of course, you need to take off the cap for charging.

4.Helmet mount

Put the camera inside this mount, and stick it to your helmet. Here you go!

Tips: if you need to record the sound and not use underwater, you can change the wind cap which has holes in it.